



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/973,783	10/11/2001	Fred A. Bunn	1875.0680002	7272

26111 7590 01/09/2006

STERNE, KESSLER, GOLDSTEIN & FOX PLLC
1100 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER

JOO, JOSHUA

ART UNIT	PAPER NUMBER
----------	--------------

2154

DATE MAILED: 01/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/973,783

Applicant(s)

BUNN ET AL.

Examiner

Joshua Joo

Art Unit

2154

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/31/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment filed 10/31/2005

1. Claims 1-11 are presented for examination.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted 10/31/2005 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 2 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claim 2, the newly amended limitation of "a plurality of DOCSIS networks" and "generating a plurality of data compression dictionaries, each of which is individually tuned for a corresponding one of the plurality of DOCSIS networks" are not supported by the specification of the instant application. According to the specification, the system comprises a plurality of cable modems (Paragraph 0046), but the cable modems are part of a single DOCSIS network (Fig. 1; Paragraph 0046). Even in Paragraph 0072, the specification states, "the CMTS transmits the data compression dictionary to each cable modem with the HFC network."

Therefore, while a plurality of dictionaries may be generated, the dictionaries are sent to cable

Art Unit: 2154

modems within the HFC network, and there is no description of a plurality of networks and transmitting data compression dictionary corresponding to one of the plurality of DOCSIS network as claimed.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3, 7, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Satoh et al, US Publication #2002/0029206 (Satoh hereinafter), in view of Chapman, US Patent #6,438,123 (Chapman hereinafter).

7. As per claim 1, Satoh teaches substantially the invention as claimed including a method for generating a data compression dictionary in a network, Satoh's teachings comprising:

- i. identifying a plurality of frequently occurring data strings transmitted to an apparatus (Paragraph 0475; 0507. Identify frequently occurring data strings);
- ii. assigning a token to represent each one of the plurality of frequently occurring data strings (Paragraph 00492; 0507; Page 33, claims 1 and 2. Code data to be compressed.);
- iii. entering each one of the plurality of frequently occurring data strings and each token assigned to represent each one of the plurality of frequently occurring data strings into a lookup table to produce a data compression dictionary (Paragraph 0491-0492. Use code to create dictionary.); and

iv. transmitting the data compression dictionary to the apparatus (Paragraph 0445; 0494; 0515. Outputs dictionary to decompressing side.).

8. Even though Satoh teaches substantial features of the claimed invention including transmitting data among terminals connected by modem (Paragraph 0178), Satoh does not teach of transmitting data by a plurality of cable modems in a DOCSIS network.

9. Chapman teaches the concept of transmitting and receiving data by a plurality of cable modems in a DOCSIS network (Fig. 1; Col 1, lines 39-45; Col 3, lines 25-57), wherein the data is compressed (Col 7, lines 42-49, 59-67).

10. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Satoh with the teachings of Chapman because the teachings of Chapman to transmit and receive compressed data by a plurality of cable modems in a DOCSIS network would improve the usability of Satoh's teachings by providing dictionary compression in other types of network implementing compression such as in a cable modem network.

11. As per claim 3, Satoh teaches the method for transmitting compressed data packets in a network, Satoh's teachings comprising the steps of:

i. receiving a plurality of data packets for transmission, wherein each of said data packets has a payload portion comprised of one or more data strings (Paragraph 0475; 0507. Data, data strings.);

ii. identifying which of said data packets has a payload portion that can be compressed (Paragraph 0211; 0476; 507. Identify data to be compressed.);

iii. for each of said data packets identified in said step (b), replacing each of said one or more data strings contained in said payload portion with a token from said data

Art Unit: 2154

compression dictionary assigned to represent said one or more data strings (Paragraph 0474-0476; 0507-0508. Use compression dictionary to code frequently occurring strings.), wherein said data compression dictionary is tuned to data transmitted by a terminal (Paragraph 0515);

iv. appending a compression indicator to each of said tokens within each of said data packets (Paragraph 0475; 0483; 0515. Decompression based on code and dictionary. Indicator is inherent.); and

v. transmitting said data packets (Paragraph 0515. Receives compressed data.).

12. Even though Satoh teaches substantial features of the claimed invention including transmitting data among terminals connected by modem (Paragraph 0178), Satoh does not teach of transmitting data by a plurality of cable modems in a DOCSIS network or within a DOCSIS service identifier.

13. Chapman teaches the concept of transmitting and receiving data by a plurality of cable modems in a DOCSIS network (Fig. 1; Col 1, lines 39-45; Col 3, lines 25-57), wherein the data is compressed (Col 7, lines 42-49, 59-67).

14. See motivation for combining from above rejection of claim 1.

15. As per claim 7, Satoh teaches the method for decompressing data transmitted over a network, Satoh's teachings comprising the steps of:

i. receiving a plurality of data packets transmitted within a network, wherein each of said data packets has a payload portion (Paragraph 0483; 0515. Receives compressed data.);

ii. identifying each of said plurality of data packets having a compression indicator appended to one or more tokens within said payload portion (Paragraph 0483; 0515.

Decompresses compressed data based on dictionary. Identifying is an essential step.); and

Art Unit: 2154

iii. for each of said data packets identified in said step (b), replacing each of said one or more tokens contained within said payload portion with a data string assigned to represent said one or more tokens found in a data compression dictionary, wherein said data compression dictionary is tuned to data transmitted by a terminal(Paragraph 0483-0485; 0515-0156. Decodes compressed data based on compression dictionary.)

16. Even though Satoh teaches substantial features of the claimed invention including transmitting data among terminals connected by modem (Paragraph 0178), Satoh does not teach of transmitting data by a plurality of cable modems in a DOCSIS network or within a DOCSIS service identifier.

17. Chapman teaches the concept of transmitting and receiving data by a plurality of cable modems in a DOCSIS network (Fig. 1; Col 1, lines 39-45; Col 3, lines 25-57), wherein the data is compressed (Col 7, lines 42-49, 59-67).

18. See motivation for combining from above rejection of claim 1.

19. As per claim 10, Sato teaches the method further comprising:

v. updating the data compression dictionary (Paragraph 0362; 0507-509. Updating dictionary.); and

vi. transmitting the updated data compression dictionary (Paragraph 0515.);

Sato does not teach of transmitted data to a plurality of cable modems in the DOCSIS network.

20. Chapman teaches the concept of transmitting data by a plurality of cable modems in a DOCSIS network (Fig. 1; Col 1, lines 39-45; Col 3, lines 25-57).

21. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Satoh with the teachings of Chapman because the teachings of Chapman to transmit data by a plurality of cable modems in a DOCSIS network would improve the system of Satoh by providing dictionary compression to cable modem networks.

22. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Satoh and Chapman, in view of Carr, US Patent #5,293,379 (Carr hereinafter).

23. As per claim 2, Satoh and Chapman taught the method of claim 1. However, Satoh does not teach the method further comprising repeating steps i.-iv. for each of a plurality of DOCSIS networks, thereby generating a plurality of data compression dictionaries, each of which is individually tuned for a corresponding one of the plurality of DOCSIS networks.

24. Chapman teaches the concept of transmitting data to a plurality of cable modems in a DOCSIS network (Fig. 1; Col 1, lines 39-45; Col 3, lines 25-57).

25. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Satoh and Chapman because the teachings of Chapman to transmit data to a plurality of cable modems would improve the system of Satoh by providing compression system using a dictionary to the cable modems connected on a DOCSIS network.

26. Carr teaches of providing individual user-data dictionaries (Col 7, lines 43-44).

27. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Satoh, Chapman, and Carr because the teachings of Carr to use individual dictionaries would improve the system of Satoh and Chapman because doing so

Art Unit: 2154

would improve the probability that user data appearing in succeeding packets will be efficiently compressed (Col 7, lines 42-46).

28. Claims 4-5 and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Satoh, Chapman, and Carr, in view of Eller #5,737,733 (Carr hereinafter).

29. As per claims 4-5 and 8-9, Satoh does not teach the method of claim 3 wherein the token is a binary string, and wherein the compression indicator indicates the length of the binary string.

30. Eller teaches using a dictionary for compression, wherein the code is binary (Col 3, lines 37-42; Col 4, lines 1-6), and the compression indicator indicates the length of the binary string (Col 20, lines 55-63).

31. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Satoh, Chapman, Carr, and Eller because the teachings of Eller to use binary codes and to use a compression indicator that indicates the length of binary code would improve the system of Satoh, Chapman, and Carr by providing a method of compression and decompression by determining and matching the length of the string with the length indicator (Col 22, lines 30-47).

32. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Satoh and Chapman, in view of Chu, US Patent #5,530,645 (Chu hereinafter).

33. As per claim 6, Satoh does not teach the method of claim 3 wherein said data compression dictionary is pre-defined and fixed.

34. Chu teaches of dictionary compression, wherein the dictionary is predefined and fixed (Col 2, line 57-Col 3, line 21).

35. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Satoh, Chapman, and Chu because the teachings of Chu to use a predefined and fixed dictionary would improve the system of Satoh and Chapman by detecting and matching data strings (Col 3, lines 22-41), which would results in faster compression.

36. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Satoh and Chapman, in view of Konno et al, US Patent #6,078,955 (Konno hereinafter).

37. As per claim 11, Satoh teaches transmitting data compression dictionary to a terminal. However, Satoh does not teach not teach the method of claim 1, further comprising:

v. transmitting the data compression dictionary to a new cable modem responsive to the new cable modem being connected to the DOCSIS network.

38. Konno teaches the concept of detecting the presence of newly connected device and transmitting information to the device (Col 2, lines 44-54).

39. It would have been obvious to combine the teachings of Satoh, Chapman, and Konno because the teachings of Konno to transmit data to a newly connected device would improve the system of Satoh and Chapman by allowing the terminal to use the resources of the computer system (Col 2, lines 51-54), in this case, allowing the terminal to compress and decompress data.

Response to Arguments

40. Applicant's arguments with respect to claims 1, 3, and 7 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

41. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

42. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

43. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua Joo whose telephone number is 571 272-3966. The examiner can normally be reached on Monday to Friday 7 to 4.

44. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John A. Follansbee can be reached on 571 272-3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2154

45. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

December 27, 2005
JJ


JOHN FOLLANSBEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100